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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,772	08/25/2003	Milivoje Aleksic	00100.03.0009	2757

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EXAMINER	
TUNG, KEE M	
ART UNIT	**PAPER NUMBER**
2671	

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/647,772	ALEKSIC ET AL.	
	Examiner	Art Unit	
	Kee M. Tung	2671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-9 and 16-29* is/are allowed.

6)☒ Claim(s) *10-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The response filed 7/25/05 has been considered in preparing this Office action.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 10-13, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,342,892 to Van Hook et al and U.S. Patent No. 6,762,763 to Migdal et al.

As per claims 10 and 11, Van Hook teaches a high performance 3D graphics system comprising: a command queue capable of receiving a plurality of rendering commands (Fig. 20: *command unit buffer RAM 516*; c. 49 ll. 17-19: *once one or more commands have been loaded into command unit buffer RAM 516...*), a generate_event

command (c. 48 ll. 27-30: *display processor 500 obtains data for its texture memory 502 by passing texture load commands to command unit 514 and using memory interface 512 to perform those commands*); a direct memory access device coupled to the command queue (Fig. 20: *DMA controller 518 coupled to the command unit 514 including command unit buffer RAM 516*); a memory device storing rendering information (c. 9 ll. 28-30: *Main processor 100 stores the texture images 116 into main memory 300 for access by display processor 500*; c. 13 ll. 44-60: *Main memory 300 provides ... display list graphics commands 110a, texture maps 116 and other graphics data 112c; color image frame buffer 118a, and coprocessor working values*), the memory device accessible in response to the generate_event command (c. 52 ll. 32-38: *load tile command*); and the command queue capable of queuing the rendering commands (Fig. 20: *command unit buffer RAM 516*) . Van Hook discloses that the DMA controller 518 reads a string of graphics display commands from main memory (Fig. 20 and c. 48 ll. 7-16), and that the display processor 500 accesses main memory 300 via memory interface 512 and coprocessor main internal bus 214, where the memory interface is primarily used to access the color frame buffer and the z buffer (c. 47 ll. 65-c. 48 ll. 6). Van Hook does not expressly teach the direct memory access device is capable of receiving a memory access command in response to the generate_event command. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized the DMA controller in Van Hook's system to load texture data from the main memory into the texture memory, instead of the memory interface 512. One would have been motivated to do so in order to load the

data faster and without competing with accesses to the color frame buffer and z buffer. Van Hook discloses that texture loads after primitive rendering should be preceded by a sync load command; but Van Hook does not expressly teach a wait_until command, wherein the wait_until command corresponds to the completion of an operation indicated by the generate_event command, or queuing the rendering commands until the completion of the operation indicated by the generate_event command. Migdal discloses a computer system implementing a synchronization scheme in which texture downloads is synchronized with drawing primitives that use the texture data (c. 11 ll. 35-37). Migdal discloses that for a texture download followed by drawing commands that use the new texture data, a SetSyncID (g, i) command is issued after the texture download, and a WaitSyncID (g, i) is issued before the first drawing command that uses the texture data; and for drawing commands followed by a texture download that overwrites old texture data, a SetSyncID (g, j) command is issued after the last drawing command that uses the old texture data, and a WaitSyncID (g, j) command is issued before the texture download in order to guarantee proper synchronization (c. 11 ll. 37-48). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized the SetSyncID (g, i) command and the WaitSyncID (g, i) command as taught by Migdal in combination with Van Hook's texture load command and the command unit buffer RAM, in order to synchronize the texture downloads with the drawing primitives that use the texture data as taught by Migdal.

As per claim 12, Van Hook discloses using the event flag to indicate the completion of the memory operation (Fig. 21D and c. 48 ll. 43-61: *command unit 514*

includes a status/command register 534 that acts as a status register indicating whether texture memory 502 is busy (field 536(5); whether the display processor pipeline is busy (field 536(6); whether command unit 514 is busy (field 536(7); whether the command buffer RAM 516 is ready to accept new inputs (field 536(8); whether DMA controller 518 is busy (field 536(9); and whether the start and end addresses and registers 518a and 518b respectively valid (fields 536(10), 536(11)).

As per claim 13, Van Hook discloses that the memory device is an external memory device, the apparatus further comprising: the external memory device storing a plurality of rendering data sets (Fig. 5: *main memory 300 storing textures 116, frame buffer 118 and graphics database112*); and an embedded memory device capable of storing one of the plurality of rendering data sets (Fig. 5: *texture memory 502 within display processor 500*).

As per claim 15, Van Hook discloses a graphics rendering engine operably coupled to the command queue such that the graphics rendering engine generates the rendering commands, the generate_event command (Fig. 20: *display processor 500 comprising the command unit buffer RAM 516*).

4. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,342,892 to Van Hook et al and U.S. Patent No. 6,762,763 to Migdal et al and U.S. Patent No. 6,609,977 to Shimizu et al.

As per claim 14, Van Hook does not expressly teach that the external memory is a secure digital memory card. Shimizu, in an analogous art, teaches system interfaces

used to connect graphics system to audio, video, mass media storage device, communications, and other electronic devices (c. 1 ll. 20-27), in which the system supports SD-memory cards offering large capacity non-volatile storage (Fig. 28B: *memory cards C*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have implemented Shimizu's SD-digicard adapter in Van Hook's system in order to provide additional non-volatile storage.

Allowable Subject Matter

5. Claims 1-9 and 16-29 are allowed.

Response to Arguments

6. Applicant's arguments filed 7/25/05 have been fully considered but they are not persuasive.

The rejection of claims 10-15 has been modified in order to fully considered applicant's arguments. Applicant argues that both Van Hook and Migdal are not directly to a mobile device. Well, a laptop mobile computer can be called a network based system because the laptop can also connected to a network either by wire or wireless at least the time present invention was made. Therefore, the network based system of Migdal can be easily configured or modified or called the claimed mobile device.

Regarding to arguments of WaitSyncID is not equivalent to the claimed wait_until command, well, the function of wait_until command is to wait until other operation (memory operation) is completed. The WaitSyncID is also used to wait until other operation (Synchronized) is completed. Therefore, the functionality is equivalent which is wait until other operations are completed.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kee M. Tung whose telephone number is 571-272-7794. The examiner can normally be reached on Tuesday - Friday from 5:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on 571-272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kee M Tung
Primary Examiner
Art Unit 2671